

## Published Papers

1. *Horia D. Cornean and Radu Purice*: Spectral regularity with respect to dilations for a class of pseudodifferential operators. Proceedings of the 10-th Congress of Romanian Mathematicians. **Rev. Roumaine Math. Pures Appl** **69**, nos. 3-4, 2024
2. *Horia D. Cornean, Bernard Helffer and Radu Purice*: Matrix Representation of Magnetic Pseudo-Differential Operators via Tight Gabor Frames. **J Fourier Anal Appl** **30**, 21 (2024). <https://doi.org/10.1007/s00041-024-10072-4>
3. *Horia D. Cornean and Radu Purice*: Sharp spectral stability for a class of singularly perturbed pseudo-differential operators. **Journal of Spectral Theory** **13** (3), (2023), pag. 1129 - 1144, doi: DOI 10.4171/JST/471
4. *Horia D. Cornean, Bernard Helffer and Radu Purice*: Spectral analysis near a Dirac type crossing in a weak non-constant magnetic field. **Transactions of the American Mathematical Society** **374** (10), ( 2021), p. 7041–7104.
5. *Horia Cornean, Bernard Helffer, Radu Purice*: Peierls' substitution for low lying spectral energy windows, **Journal of Spectral Theory** **9** (4)(2019) pag. 1179 – 1222.
6. *Horia Cornean, Viorel Iftimie, Radu Purice*: Peierls' substitution via minimal coupling and magnetic pseudo-differential calculus, **Reviews in Mathematical Physics** **31** (3) (2019), Art. nr. **1950008**.
7. *Viorel Iftimie, Marius Măntoiu, Radu Purice*: Quantum observables as magnetic PsiDO, **Revue Roumaine de Mathématiques Pures et Appliquées** **64** (2-3) (2019), pag. 197 -- 223
8. *Horia Cornean, Bernard Helffer, Radu Purice*: A Beals criterion for magnetic pseudodifferential operators proved with magnetic Gabor frames, **Communications in Partial Differential Equations** **43** (8) (2018), pp. 1196 --1204.
9. *Nassim Athmouni and Radu Purice*: A Schatten-von Neumann class criterion for the magnetic Weyl calculus, **Communications in Partial Differential Equations** **43** (5), (2018), pag. 733--749.
10. *Horia D. Cornean, Bernard Helffer, Radu Purice*: Low lying spectral gaps induced by slowly varying magnetic fields, **Journal of Functional Analysis** **273**, (1), (2017), pp. 206--282
11. *Cornean, H. D.; Purice, R.*: Spectral edge regularity of magnetic Hamiltonians, **Journal of the London Mathematical Society**, (2015), 16 p.

12. *Viorel Iftimie, Radu Purice*: The Peierls-Onsager Effective Hamiltonian in a complete gauge covariant setting: Determining the spectrum, **Journal of Spectral Theory**, **5**, (2015), pp. 445 – 531.
13. *Măntoiu, Marius; Purice, Radu*: On Fréchet-Hilbert algebras. **Archiv der Mathematik** **103**, (2) (2014), pp. 157 – 166.
14. *Cornean, H. D.; Purice, R.*: On the Regularity of the Hausdorff Distance Between Spectra of Perturbed Magnetic Hamiltonians. **Spectral Analysis of Quantum Hamiltonians**, in Operator Theory: Advances and Applications Volume 224, 2012, pp 55-66, Springer Basel, ISBN: 978-3-0348-0413-4.
15. *Cornean, H. D.; Duclos, P.; Purice, R.* : Adiabatic Non-Equilibrium Steady States in the Partition Free Approach. **Annales Henri Poincaré** **13** (2012), no. 4, 826—857.
16. *Marius Măntoiu, Radu Purice*: Abstract composition laws and their modulation spaces. **Journal of Pseudo-Differential Operators and Applications**, **3** (3) (2012), 283 – 307;
17. *Măntoiu, Marius; Purice, Radu; Richard, Serge*: Positive quantization in the presence of a variable magnetic field. **Journal of Mathematical Physics**, **52** (2011), no. 11, 112101, 15 pp. FI: 1.210, SRI: 0.609
18. *Viorel Iftimie, Radu Purice*: Eigenfunctions decay for magnetic pseudodifferential operators, **Journal of Mathematical Physics**, **52** (9) (2011), (11 pages).
19. *Viorel Iftimie, Radu Purice*: Magnetic Fourier integral operators, **Journal of Pseudo-Differential Operators and Applications**, **2** (2)(2011), 141 – 218;
20. *Măntoiu, Marius; Purice, Radu; Richard, Serge*: Coherent states and pure state quantization in the presence of a variable magnetic field, **International Journal of Geometric Methods in Modern Physics**, **8** (1)(2011), 187--202;
21. *Bernard Helffer and Radu Purice*: Magnetic calculus and semiclassical trace formulas. **Journal of Physics A: Mathematical and Theoretical** **43** (2010) 474028 (21pp)
22. *Nassim Athmouni, Marius Măntoiu, and Radu Purice*: On the continuity of

spectra for families of magnetic pseudodifferential operators. **Journal of Mathematical Physics** **51**, (15 pages).

23. *Viorel Iftimie, Marius Mantoiu, Radu Purice*: Commutator Criteria for Magnetic Pseudodifferential Operators. **Comm. Partial Diff. Eq.** **35** (2010), 1058—1094.
24. *Marius Mantoiu, Radu Purice*: The modulation mapping for magnetic symbols and operators. **Proc. Amer. Math. Soc.** **138** (2010), 2839-2852.
25. *Viorel Iftimie, Marius Mantoiu, Radu Purice*: Unicity of the Integrated Density of States for Relativistic Schrödinger Operators with Regular Magnetic Fields and Singular Electric Potentials. **Integral Equations and Operator Theory**, **67**, 2, (2010), 215 --246.
26. *Viorel Iftimie, Marius Mantoiu, Radu Purice*: The magnetic formalism; new results. **Contemporary Mathematics** **500** (2009), American Mathematical Society, p. 123 – 138.
27. *Viorel Iftimie, Marius Mantoiu, Radu Purice*: Estimating the number of negative eigenvalues of a relativistic Hamiltonian with regular magnetic field. **Topics in applied mathematics and mathematical physics**, 97--129, Ed. Acad. Române, Bucharest, 2008.
28. *Cornean, H. D.; Duclos, P.; Nenciu, G.; Purice, R.* Adiabatically switched-on electrical bias and the Landauer-Büttiker formula. **J. Math. Phys.** **49** (2008), no. 10, 102106, 20 pp.
29. *Mantoiu, Marius; Purice, Radu; Richard, Serge*: Spectral and propagation results for magnetic Schrödinger operators; a C\*-Algebraic framework, **Journal of Functional Analysis**, **250** (2007), 42--67;
30. *Viorel Iftimie; Mantoiu, Marius; Purice, Radu* Magnetic pseudodifferential operators, **Publications of RIMS**, **43** (2007), no. 3, 585–623.
31. *Mantoiu, Marius; Purice, Radu* Hardy type inequalities with exponential weights for a class of convolution operators, **Arkiv foer Matematik**, **45** (2007), 83--103.
32. *Mantoiu, Marius; Purice, Radu; Richard, Serge* On the essential spectrum of magnetic pseudodifferential operators, **C. R. Acad. Sci. Paris, Ser. I**, **344** (2007), 11--14.
33. *Mantoiu, Marius; Purice, Radu* The mathematical formalism of a particle in a

magnetic field. Mathematical physics of quantum mechanics, 417--434, **Lecture Notes in Phys.**, 690, Springer, Berlin, 2006.

34. *Mantoiu, Marius; Purice, Radu; Richard, Serge* Twisted crossed products and magnetic pseudodifferential operators. Advances in operator algebras and mathematical physics, 137--172, **Theta Ser. Adv. Math.**, 5, Theta, Bucharest, 2005.
35. *Mantoiu, Marius; Purice, Radu* Strict deformation quantization for a particle in a magnetic field. **J. Math. Phys.** 46 (2005), no. 5, 052105, 15 pp.
36. *Mantoiu, Marius; Purice, Radu* The magnetic Weyl calculus. **J. Math. Phys.** 45 (2004), no. 4, 1394--1417.
37. *Amrein, W. O.; Mantoiu, M.; Purice, R.* Propagation properties for Schrödinger operators affiliated with certain  $\mathcal{C}^{\text{sp}}$ - $\ast$ -algebras. **Ann. Henri Poincaré** 3 (2002), no. 6, 1215--1232.
38. *Mantoiu, Marius; Purice, Radu* A Hardy type estimate with exponential weights. **C. R. Math. Acad. Sci. Paris** 335 (2002), no. 12, 1023--1027.
39. *Mantoiu, Marius; Purice, Radu* The algebra of observables in a magnetic field. Mathematical results in quantum mechanics (Taxco, 2001), 239--245, **Contemp. Math.**, 307, Amer. Math. Soc., Providence, RI, 2002.
40. *Mantoiu, Marius; Purice, Radu* Hardy type inequalities, Mourre estimate and a-priori decay for eigenfunctions. Partial differential equations and spectral theory (Clausthal, 2000), 223--228, **Oper. Theory Adv. Appl.**, 126, Birkhäuser, Basel, 2001.
41. *Mantoiu, Marius; Purice, Radu* A-priori decay for eigenfunctions of perturbed periodic Schrödinger operators. **Ann. Henri Poincaré** 2 (2001), no. 3, 525--551.
42. *Mantoiu, Marius; Purice, Radu* Weighted estimations from a conjugate operator. **Lett. Math. Phys.** 51 (2000), no. 1, 17--35.
43. *Boutet de Monvel, Anne; Purice, Radu* The conjugate operator method: application to Dirac operators and to stratified media. Evolution equations, Feshbach resonances, singular Hodge theory, 243--286, **Math. Top.**, 16, Wiley-VCH, Berlin, 1999.
44. *Mantoiu, Marius; Purice, Radu* Some propagation properties of the Iwatsuka model. **Comm. Math. Phys.** 188 (1997), no. 3, 691--708.
45. *Mantoiu, Marius; Purice, Radu* Propagation estimate for a magnetic field

Hamiltonian with band spectrum. Differential equations, asymptotic analysis, and mathematical physics (Potsdam, 1996), 218--225, **Math. Res.**, 100, Akademie Verlag, Berlin, 1997.

46. *Nenciu, Gheorghe; Purice, Radu* One-dimensional periodic Dirac Hamiltonians: semiclassical and high-energy asymptotics for gaps. **J. Math. Phys.** 37 (1996), no. 7, 3153--3167.
47. *Boutet de Monvel, Anne; Purice, Radu* A propagation estimate for the Dirac Hamiltonian in the field of an electromagnetic wave. Algebraic and geometric methods in mathematical physics (Kaciveli, 1993), 395--401, **Math. Phys. Stud.**, 19, Kluwer Acad. Publ., Dordrecht, 1996.
48. *Iftimie, Viorel; Purice, Radu* Hamiltoniens à N corps avec champs magnétiques très singuliers du type "courte portée". (French) [N-body Hamiltonians with singular short-range potentials] **Lett. Math. Phys.** 33 (1995), no. 2, 127--138.
49. *Boutet de Monvel, Anne Marie; Purice, Radu* A distinguished self-adjoint extension for the Dirac operator with strong local singularities and arbitrary behaviour at infinity. **Rep. Math. Phys.** 34 (1994), no. 3, 351--360.
50. *Boutet de Monvel-Berthier, Anne-Marie; Purice, Radu* Unitarity of the wave operators for the Dirac evolution equation in the presence of an electromagnetic wave. **C. R. Acad. Sci. Paris Sér. I Math.** 319 (1994), no. 3, 213--218.
51. *Boutet de Monvel-Berthier, Anne; Purice, Radu* The Dirac evolution equation in the presence of an electromagnetic wave. **Helv. Phys. Acta** 67 (1994), no. 2, 167--187.
52. *Boutet de Monvel, Anne; Purice, Radu* Limiting absorption principle for Schrödinger Hamiltonians with magnetic fields. **Comm. Partial Differential Equations** 19 (1994), no. 1-2, 89--117.
53. *Boutet de Monvel-Berthier, Anne; Manda, Dragos; Purice, Radu* Limiting absorption principle for the Dirac operator. **Ann. Inst. H. Poincaré Phys. Théor.** 58 (1993), no. 4, 413--431.
54. *Boutet de Monvel-Berthier, Anne; Purice, Radu* The conjugate operator method for magnetic Hamiltonians. **C. R. Acad. Sci. Paris Sér. I Math.** 316 (1993), no. 3, 239--244.
55. *Boutet de Monvel-Berthier, Anne; Georgescu, Vladimir; Purice, Radu* A boundary value problem related to the Ginzburg-Landau model. **Comm. Math. Phys.** 142 (1991), no. 1, 1--23.

56. *Boutet de Monvel-Berthier, Anne; Manda, Dragos; Purice, Radu* The commutator method for form-relatively compact perturbations. **Lett. Math. Phys.** 22 (1991), no. 3, 211--223.
57. *Purice, R.* Clifford algebras and the quantization of the free Dirac field. **Rev. Roumaine Phys.** 35 (1990), no. 4, 299--315.
58. *Grigore, D. R.; Nenciu, G.; Purice, R.* On the nonrelativistic limit of the Dirac Hamiltonian. **Ann. Inst. H. Poincaré Phys. Théor.** 51 (1989), no. 3, 231--263.
59. *Boutet de Monvel-Berthier, Anne-Marie; Georgescu, Vladimir; Purice, Radu* Sur un problème aux limites de la théorie de Ginzburg-Landau. (French) [A boundary value problem in the Ginzburg-Landau theory] **C. R. Acad. Sci. Paris Sér. I Math.** 307 (1988), no. 1, 55--58.
60. *Purice, R.* The operator algebra approach in quantum field theory. (Romanian) **Stud. Cerc. Fiz.** 39 (1987), no. 4, 284--352.
61. *Purice, R.* Wigner's theorem and the asymptotic condition in scattering theory. **Helv. Phys. Acta** 59 (1986), no. 8, 1321--1336.
62. *Georgescu, V.; Purice, R.* On the Markoff property for the free Euclidean electromagnetic field. **Lett. Math. Phys.** 6 (1982), no. 5, 341—344.